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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,568	06/27/2001	Darren Kim	6487-60420 (25916-228)	5901

30764 7590 05/02/2006

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EXAMINER

NELSON, ALECIA DIANE

ART UNIT

PAPER NUMBER

2629

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/894,568

Applicant(s)

KIM ET AL.

Examiner

Alecia D. Nelson

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-8,10-17,20-25,28-62 and 65 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-8,10-17,20-25,28-62 and 65 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351 (a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. ***Claims 53 and 54*** are rejected under 35 U.S.C. 102(e) as being anticipated by Yeom et al. (U.S. Patent No. 5,943,625).

Yeom et al. teaches a wireless input device for transmitting data to a computer comprising a housing (200), a pointing device for generating positional information (25), a sound input non-pointing device mounted on the housing for generating input information for the computer (see column 5, lines 1-7), a transmitter (261, 263) for transmitting data from the pointing and non-pointing devices, and a selector for choosing between operating the input device as the pointing device or non-pointing device (see column 4, lines 43-59).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. **Claims 1-8 and 34-41** are rejected under 35 U.S.C. 103(a) as being unpatentable over Blankenship et al. (U.S. Patent No. 5,726,684) in view of Hines (U.S. Patent No. 6,111,563).

With reference to **claims 1-3 and 34-36**, Blankenship et al. teaches a computer base section (40) containing a keyboard (50), a display section comprising a display frame with a bezel holding a liquid crystal display (20), display section being coupled to the computer base by hinges (30), and an infrared sensor attached to said notebook computer (see col. 3, lines 5-41).

Blankenship et al. fails to specifically teach that the infrared sensor is disposed on the display frame of the display section so that a wide-angle infrared detection response is achieved.

Hines teaches the usage of infrared sensors (51) located on the housing of the computer (59) so that a wide angle infrared detection response is achieved (see column 13, lines 9-26).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow the usage of the wide angle sensors as taught by Hines, in a system similar to that which is taught by Blankenship et al. in order to thereby provide a notebook computer capable of receiving signals from a sensor attached to the frame of the display so that a wide angle detection is achieved and the coordinate input device is capable of improved detection of signals received by the computer (see Hines, column 4, lines 23-33).

With reference to **claims 4-8 and 37-41**, Blankenship et al. teaches a computer base section (40) containing a keyboard (50), a display section comprising a display frame with a bezel holding a liquid crystal display (20), display section being coupled to the computer base by hinges (30), and at least two infrared sensors (140) attached to said notebook computer (see col. 3, lines 5-41).

While teaching the usage of at least two IR sensors, Blankenship et al fails to teach that the infrared sensors are disposed so that a wide angel infrared detection response is achieved or a means for combining the signals received.

Hines teaches the usage of infrared sensors (51) located on the housing of the computer (59) so that a wide-angle infrared detection response is achieved (see column

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13, lines 9-26). Hines also teaches a signal combining element to combine the output signals from the sensors (see column 13, lines 58-66).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow the usage of the wide angle sensors as taught by Hines, in a system similar to that which is taught by Blankenship et al. in order to thereby provide a notebook computer capable of receiving signals from a sensor attached to the frame of the display so that a wide angle detection is achieved and the coordinate input device is capable of improved detection of signals received by the computer (see Hines, column 4, lines 23-33).

/

6. **Claims 10-15 and 42-46**, are rejected under 35 U.S. C. 103(a) as being unpatentable over Junod et al. (U.S. Patent No. 5,854,621) in view of Donovan (U.S. Patent No. 5,252,968).

With reference to **claim 10**, Junod et al. teaches an input device for controlling positional information for a computer comprising a housing (100,170), a ball (200) capable of being rotated to determine the cursor position, and that the ball coupled to an optical encoder which provides output signals in response to rotation of the ball (see column 5, lines 1-10). It is further taught the usage of control circuitry that conserves power by operating the optical encoder in a mode when the ball is at rest longer than a pre-selected time interval and the control circuit utilizes the signals of the encoder to determine when to resume a continuous position sensing encoder mode (see column 6, lines 37-65).

While it is taught the usage of an optical encode which provides output signals in response to rotation of the ball, Junod et al. fails to specifically teach that the control circuit receives as inputs, the output signals of the optical encoder, nor that the control circuit is also capable of controlling the power to the photo-interruptors of the optical encoder.

Donovan teaches that the control circuit (36) receives as inputs the output signals of the optical encoder (see column 5, lines 28-59). It is also taught that the control circuit is capable of controlling the power to the photo-interruptors of the optical encoder (see column 3, lines 24-46).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention for a control circuit capable of receiving outputs of the optical encoder and capable of controlling the power to the photo-interruptors, as taught by Donovan to be used in a system similar to that which is taught by Junod et al. to have the capability to control the power of the photo interruptors to thereby conserve the usage of power when operating the input device (see Donovan, column 3, lines 31-34).

With further reference to **claims 11 and 42**, Junod et al. fails to specifically teach the usage of an infrared transmitter coupled to the housing for transmitting signals. However, Junod et al. does teach the usage of radio frequency (RF) transmission.

The examiner takes Official Notice that the usage of RF transmission and IR transmissions are both well known in the art for a means of wireless communication.

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Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow the usage of an infrared transmitter as opposed to a RF transmitter, as well known by those skilled in the art, with a device similar to that which is taught by Junod et al. in order to thereby allow for a device that allows for multiple types of wireless connection.

With reference to **claims 12 and 43**, Junod et al. teaches that the mouse (10) can operate in three power modes (normal, standby, and sleep) to conserve energy (see column 6, lines 37-40).

With reference to **claims 13 and 44**, Junod et al. teaches a sleep mode, which is when no motion is being detected, therefore no data pulses can be transmitted (see column 6, lines 37-65).

With reference to **claims 14 and 45**, Junod et al. teaches the usage of user settable identification codes (see column 5, lines 34-54).

With reference to **claims 15 and 46**, neither Junod et al. nor Donovan teach the usage of a laser pointer contained within the input device. However, the examiner takes Official Notice that the usage of a laser pointer in an input device is well known in the art.



Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to use IR transmission as opposed to RIF transmission in a wireless input device to thereby transmit information for cursor control.

7. **Claims 16, 17, and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Blankenship et al. (U.S. Patent No. 5,726,684) in view of Cheng (U.S. Patent No. 5,457,479) and Heng-Chuen (U.S. Patent No. 5,914,703).

With reference to **claims 16, 17, and 20**, Blankenship et al. teaches an compact infrared input device for a notebook computer including a frame housing (70), and a mouse ball (80) coupled to said top or bottom surface of the housing (70). Blankenship et al. also teaches the usage of optical encoders (see column 1, lines 17-38) as well as infrared sensors for wireless transmission mean (see column 3, lines 30-41).

Blankenship et al. fails to specifically teach the usage of a first and second pointing device located on the housing, however does teach that ball (80) could be use in a mouse or trackball, and also fails to specifically teach that housing (70) is of size to be operated in the users hand.

Cheng teaches an apparatus having dual modes and adapted to control a position of a cursor on a display screen comprising a ball capable of being put in a rotation for determining the position. The apparatus capable of functioning as either a track ball or a mouse used for controlling a cursor on a display screen (see abstract).

Heng-Chuen also fails to specifically teach that the housing is dimensioned such that the input device may be held along its bottom portion in the palm of a hand with the

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entire top portion accessible by a thumb. However it is taught that the input device is small enough for the user to be able to use different hand arrangements to operate the pointing devices mounting on the input device (see column 4).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to have in Blankenship et al. a compact input device as taught by Heng-Chuen with two pointing devices located thereon as taught by Cheng capable of transmitting information by means of wireless transmission in which the user can operate in his/her hand in a portable computer to thereby provide the user with easier manipulation of the input device.

8. **Claims 21-23** are rejected under 35 U.S. C. 103(a) as being unpatentable over Blankenship et al. in view of Cheng and Heng-Chuen as applied to **claim 16** above, and further in view of Wang.

With reference to **claims 21-23** all that is needed is taught above with reference to **claims 16**. However it is not taught the usage of a ergo track, eraser-head, or laser pointer type input device.

Wang teaches the usage of different types of input devices to be used as a second input device of the control device (see FIGS 3, 6, 8, 10, and 15).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to for the control device if Blankenship as modified by Cheng and Heng-Chuen to have the ability to function using different types of input devices as

taught by Wang. This would provide a plurality of different embodiments for the user to choose from depending on which is most comfortable for the user.

9. **Claims 47, 48, 61, and 65** are rejected under 35 U.S.C. 103(a) as being unpatentable over Heng-Chuen (U.S. Patent No. 5,914,703) in view of Cheng.

With reference to **claims 47, 48, 61, and 65**, Heng-Chuen teaches a first input device (12) having a top and a bottom, a second pointing device (30) mounted on the top of the housing and a transmitter to transmit information from the pointing device (see column 4, lines 46-58). It is also taught that the portable computer has a computer base (20) with a second input device (22) mounted on the computer base, a display section (14) connected to the computer base. Further it is taught that the computer base (20) has a recess for receiving the first input device, wherein the recess is mounted in front of said second input device (see figure 1).

Heng-Chuen fails to specifically teach the usage of a pointing device mounted on the bottom of the housing. However, it is taught several different arrangements of the pointing devices mounted on the housing. The examiner takes Official Notice that the placement of a pointing device on the bottom of the housing is well known in the art. Therefore it would have been obvious to allow the placement of the pointing device on the bottom of the housing similar to that which is well known in the art in order to allow for the device to be used as a mouse or a trackball, depending on the preference of the user. Heng-Chuen also fails to specifically teach a receiver for receiving information by wireless transmission. However it is taught that transmission is required in order to

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control the cursor on the display. The examiner takes Official Notice that the usage of wireless transmission in such a device is well known in the art. Therefore it would have been obvious to allow the usage of a wireless connection for transmission of required signals for cursor control in order to provide cursor input without the trouble of cords or wires associated with wired transmission. Heng-Chuen also fails to specifically teach that the housing is dimensioned such that the input device may be held along its bottom portion in the palm of a hand with the entire top portion accessible by a thumb. However it is taught that the input device is small enough for the user to be able to use different hand arrangements to operate the pointing devices mounting on the input device (see column 4).

Cheng teaches an apparatus having dual modes and adapted to control a position of a cursor on a display screen comprising a ball capable of being put in a rotation for determining the position. The apparatus capable of functioning as either a track ball or a mouse used for controlling a cursor on a display screen (see abstract).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention for a pointing device to be mounted on the bottom of the housing as taught by Cheng, in a system with multiple pointing devices as taught by Heng-Chuen to thereby give the user the option to operating the input device as a mouse. It would also be obvious to use wireless transmission in such a device to thereby give the user more freedom to manipulate the device.

10. **Claims 49-52** are rejected under 35 U.S.C. 103(a) as being unpatentable over Heng-Chuen in view of Cheng as applied to **claim 47** above, and further in view of Wang (U.S. Patent No. 5,771,038).

With reference to **claims 49-52** all that is needed is taught above with reference to **claim 47**. However it is not taught the usage of a ergo track, eraser-head, or laser pointer type input device.

Wang teaches the usage of different types of input devices to be used as a second input device of the control device (see FIGS 3, 6, 8, 10, and 15).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to for the control device if Blankenship as modified by Cheng and Heng-Chuen to have the ability to function using different types of input devices as taught by Wang. This would provide a plurality of different embodiments for the user to choose from depending on which is most comfortable for the user.

11. **Claim 62** is rejected under 35 U.S.C. 103(a) as being unpatentable over Heng-Chuen in view of Cheng as applied to **claim 61** above, and further in view of Kim et al. (U. S. Patent No. 5,952,996).

Heng-Chuen and Cheng teach all that is needed as applied to claim 61 explained above, however fails to specifically teach the receiver is mounted on the display section.

Kim et al. teaches the usage of a plurality of IR sensors located on a display frame for use with an infrared pointing type wireless controller (see col. 4, lines 1-10).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to include receivers as taught by Kim on the display section of Heng-Chuen as modified by Cheng to thereby give the user a larger area to operate the input device.

12. **Claims 24 and 25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yeom et al. in view of Blankenship et al..

Yeom et al. teaches a wireless input device for transmitting data to a computer comprising a housing (200), a mouse button (28) coupled to the top surface of the housing, a pointing device for generating positional information (25), a non-pointing device mounted on the housing for generating input information for the computer (see column 5, lines 1-7), a infrared transmitter (see figure 1), and a selector for choosing between operating the input device as the pointing device or non-pointing device (see column 4, lines 43-59).

Yeom et al. fails to specifically teach the usage of an optical encoder coupled to the mouse ball. However, the usage of an optical encoder, which is coupled to a mouse ball, is well known in the art.

Blankenship et al. also teaches the usage of optical encoders in reference to conventional methods (see column 1, lines 17-38),

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention for an optical encoding means to be included into the device of Yeom et al. as taught by Blankenship to provide movement tracks of the mouse movements (see Blankenship, column 1, lines 31-35).

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13. **Claims 28 and 55** are rejected under 35 U.S.C. 103(a) as being unpatentable over Yeom et al. in view of Blankenship et al. as applied to **claim 24** above, or over Yoem et al. as applied to **claim 53** above, and further in view of Klein et al. (U.S. Patent No. 6,163,326).

Yeom et al. and Blankenship et al. teaches all that is needed as explained above with reference to **claim 24**, however fail to teach the usage of a joystick data input device.

Klein et al. teaches a detachable device for a laptop computer in which the second input device may include several other pointing mechanisms such as a joystick (59) (see column 7, lines 21-36).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention for the data input device of Yeom as modified by Blankenship to be of joystick type as taught by Klein. This would provide a plurality of different embodiments for the user to choose from depending on which is most comfortable for the user.

14. **Claims 29-33 and 56-60** are rejected under 35 U. S. C. 103(a) as being unpatentable over Oka (U.S. Patent No. 5,049,863) in view of Long et al. (U.S. Patent No. 5,416,909).

With reference to **claims 29 and 56**, Oka teaches an infrared input unit (16) having a first pointing device (17), which transmits positional control information as infrared signals (see column 2, lines 48-63), a computer base section (11) with a

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second pointing device (11 a, 11 b) mounted thereon, and a display section comprising a frame with a bezel holding a liquid crystal display (33). Oka also teaches that the infrared input unit (16) is dimensioned to fit into a computer base section of the notebook computer (see figure 1). With reference to claims 30 and 57, Oka teaches the usage of a third pointing device (20) connected to an external port (13,19) (see column 2, lines 33-47).

Oka fails to specifically teach the usage of a signal arbitration circuit to determine how inputs from the first and second pointing device are used to control pointer position, however does teach the usage of circuitry which receives signals from the mouse buttons and movement of the mouse (see column 3, lines 34-55).

Long et al. teaches an input-output controller which uses a single transceiver to service multiple I/O ports in a small computer system in which the arbitration logic (12) controls the accessing of the transceiver (14) by the I/O devices (see column 2, lines 56-68). With further reference to **claims 31-33 and 57-60**, Long et al. further teaches that arbitration logic controls the access of the ports to the transceiver all other I/O devices are locked out until the transfer to or from the current I/O device is complete. Once the current transfer is complete, the arbitration logic then goes back to arbitrating, looking for the next I/O device that needs service.

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention for the input device to contain arbitration circuitry as taught by Long to thereby control the input similar to that which is taught by Oka, which is received for controlling the pointer position in the display (see Long et al, column 2, lines 65-68).



***Response to Arguments***

15. Applicant's arguments with respect to claims 1-8, 10-17, 20-25, 28-62, and 65 have been considered but are moot in view of the new ground(s) of rejection.

For clarification purposes the obviousness-type double patenting rejection still applies to the instant application. The applicant acknowledge the double patenting rejection by stating that a terminal disclaimer will be submitted upon receiving an indication of the allowable subject matter (see office action mailed 12/16/02).

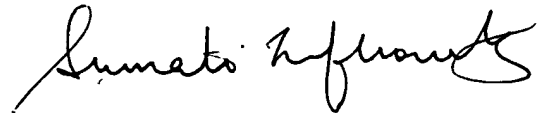
***Conclusion***

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alecia D. Nelson whose telephone number is (703) 305-0143. The examiner can normally be reached on Monday-Friday 9:30-6:00. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

adn/ADN  
April 28, 2006

A handwritten signature in black ink, appearing to read "Sumati Lefkowitz", with a stylized flourish at the end.

**SUMATI LEFKOWITZ**  
**SUPERVISORY PATENT EXAMINER**